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Working Paper Series

THE ECONOMICS OF SOCIAL SERVICE GOODS: Issues of Theory Building and Research

by

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PREFACE

In 1983, the authors completed two studies for the Ontario Economic Council entitled (1) The Social Service System in Ontario (Options for Accountability), and (2) The Feasibility of Cost-Outcome Analysis in Ontario Social Services: Six Case Studies.

The first paper provides a macro profile of the social service industry in Ontario (with expenditures of $951,205,716 in 1980-81), analyzes these expenditures by administrative auspice (voluntary, non-profit auspice - 49%, government departments - 43%, and profit-oriented firms - 8%) and by income sources (federal, provincial, and municipal taxes - 87%, fees and endowment - 10.3%, and United Way - 2.7%), and discusses the reasons why inferred market demand (market failure) rather than direct market demand must be the assumption exercised when social or health service goods are involved.

The second paper reports on six cost-outcome field demonstrations conducted in 1981-82 in six diversified social service settings: (1) a children's mental health centre; (2) a vocational rehabilitation program; (3) a pre-school education centre for working with special needs children; (4) a group home; (5) a children's aid society; and (6) a charitable home for the aged. From these demonstrations it was concluded that cost-outcome analysis (for a single program) and cost-effectiveness analysis (comparing two programs) are feasible. This second paper concludes with attention to some of the methodological hazards and limitations in cost-outcome analysis illustrated in the six field demonstrations.

I. UNDERLYING CONCEPTUAL ISSUES

Out of this interdisciplinary (economics and social work) engagement with both theoretical and practical aspects of the production of social service goods (as distinct from agricultural and manufactured goods), the authors have become aware of certain conceptual issues which may be of some interest to economists, social workers, and policy analysts.

There seem to be two conceputal issues which can catch up much of our perception of the situation:

1. the shift from reliance on linear regression (single, multiple, or simultaneous) models to reliance on experimental and quasi-experimental or evaluative research models in public expenditures analysis, and
2. the emerging interdependency between "fixed utility" and "fixed budget" approaches in cost-utility analysis for public policy and fund allocation decisions by government.

The "fixed utility" approach is characterized by the goal to achieve a certain standard of social well-being or a certain level of human problem reduction, regardless of the cost. The "fixed budget" approach is characterized by the goal to hold expenditures down to a certain level, with some attempt by decision-makers to choose those projects which appear to have the greatest returns, which may be as simplistic as choosing those projects which will gain the "most votes" and which may have little regard for social impact or economic efficiency. The "fixed budget" approach is, of course, synonomous with the "capped expenditure" procedure currently in vogue in the United States and Canada.

The mediator of this interdependency between "fixed utility" and "fixed budget" approaches is to be found in the priority setting function of government; further, this priority setting should take into account both the human problem reduction options (a hallmark of the "fixed utility" approach) and the structural limits to public expenditures (a hallmark of the "fixed budget" approach).

However, to operationalize this more dynamic interdependency within the priority setting process, cost-outcome data from operating programs, regardless of the administrative auspice for service delivery, are essential.

One British economist, Michael Carley, has provided a taxonomy of the rational techniques available for policy analysis which are viewed here as being helpful in an understanding of the relevance of these two conceptual issues.

> In modern mixed-market economies in developed and developing countries there has been increasing intervention by government in the workings of what is often termed 'the free market' over the last three decades. In the simplest terms this intervention, involving the allocation and distribution of public resources, is meant to provide goods and services which are not supplied by the market or to attempt to alleviate inefficiencies or inequalities which are caused by the workings of the market. This intervention has resulted in a large increase in the number of public sector operations, and a continued growth in the size and range of functions performed by government. ... our concern is with the fact that any attempt to allocate public resources, or make policy, must necessitate at least some reference to the differential returns which might be secured from alternative allocations of those resources (Carley, 1980, 3).

A decade earlier, as the inadequacy of line item budgets alone dawned broadly in public expenditure analysis, Haveman and Margolis could affirm that the role of the evaluative research option, as distinct from a linear regression option, was indeed to help select the best alternative for the allocation of resources.

> The basic theme which runs through economic or policy analysis is that of economic efficiency, broadly defined. Considered most simply, economic efficiency is achieved when the value of what is produced by any set of resources exceeds by as much as possible the value of the resources used; or when the least valuable set of resources is utilized in producing any particular output. Both benefit-cost and cost-effectiveness analyses apply this economic efficiency principle to public expenditure choices (Haveman and Margolis, 1971, 7).

The Carley taxonomy of rational analysis techniques referred to earlier classifies five broad options under a continuum of past-oriented ("ex post analysis") to future-oriented ("ex ante analysis") as follows (Carley, 1980, 39):

FIGURE 1
THE TIME DIMENSION IN ANALYSIS

A. FUTURES RESEARCH

Carley identifies three types of futures research: (1) extrapolative, (2) qualitative, and (3) dynamic modelling. The first involves linear regression procedures: "Trend extrapolative research is social forecasting in that it is always quantitative and projects patterns and changes in patterns based on historical data (Carley, 1980, 145). The second is characterized by Carley as follows: "These techniques are qualitative in that they rely on human judgments and criticism gathered by the asking of questions of opinion and value (Carley, 1980, 147). The third would exploit multiple linear regression procedures: "The dynamic modelling approach is also quantitative and expresses mathematically relationships between variables in a specified system (Carley, 1980, 145).

B. COST-UTILITY RESEARCH

In discussing cost-utility analysis, Carley comments as follows:

> Cost-benefit analysis (CBA), the first of the cost-utility techniques, involves the prediction and valuation, in money terms, of the losses and gains in economic welfare, or social costs and benefits, which are incurred by a society if a project of programme is undertaken (Carley, 1980, 95).

Carley distinguishes between environmental impact assessment (EPA) and social impact assessment (SIA) in reviewing the nature of impact assessment. He draws attention to the following useful contrast in focus between social impact assessment and cost-benefit analysis:

> The relevance of a particular rational technique to the policy analysis may also be affected by the de-

> gree of impact concentration. SIA with its joint emphasis on objective data and public participation is more suitable to problems with concentrated impacts than, for example, cost-benefit analysis which better evaluates problems with dispersed impacts affecting society generally but not a particular segment of the population (Sassone, 1977) (Carley, 1980, 124).

Carley identifies three models of social impact assessment: (1) an interaction model (C.P. Wolf), (2) an aggregated model (Marvin E. Olson and Donna J. Merwin) which makes extensive use of social indicators to measure predicted social impacts, and (3) a practical assessment model which makes linear projections from present-time demographic and socio-economic data.

C. EVALUATION RESEARCH

Evaluation research and its characterization within Carley's taxonomy of rational techniques for policy analysis would appear to hold out much advantage. Carley emphasizes the program specificity (hence human problem specificity) of evaluation research.

> This research attempts to answer such questions as: to what extent did the programme achieve its objectives, at what cost, was administration and implementation well done, and was the program worth doing (Carley, 1980, 160).

Carley also defines evaluation research as applied experimental or quasi-experimental in nature, in contrast, it would seem, to the linear prediction and single or multiple regression level of research illustrated in the futures research and impact assessment options. With regard to evaluation research, Carley observes as follows:

> This type of evaluation research may take the form of controlled experiments on two or more population

> groups, longitudinal comparisons over time, or other quasi-experimental designs (Carley, 1980, 161).

It would seem reasonably fair to summarize, then, from the Carley continuum of five rational techniques for policy analysis that they polarize around two methodologically distinct subsets:

a) Linear regression options: futures research, environmental and social impact assessment and social indicators, and

b) Experimental or quasi-experimental options: cost-utility analysis and evaluation research.

In the context of the philosophy of science, the linear regression options represent associational research from which causality can be suggested but not confirmed, while the experimental and quasi-experimental options represent procedures which can make somewhat more valid inferences with reference to causality.

Behind the above argument on the grounds of a philosophy of research methodologies in science lies yet another consideration. The linear regression options for policy analysis and allocation decisions are linked to quality of life criteria (largely social indicator data) which are universal in nature and refer to the normal needs of people which are very extensive in their complexity, variety, and volume. Much of the technology for "needs assessment", to date, has been oriented to this grand arena of normal needs; the resulting complexity of research design, procedure, and product can be awesome to behold, but of very little utility for policy analysis and allocation purposes.[1]

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[1] An example of the complexity, and questionable utility, of the universal needs approach to needs assessment is provided in the listing of Overall Goals and Needs - LOGAN system undertaken in 1975 by the Vancouver PPBS Project and the Social Planning Department of United Way of Greater Vancouver.

For emphasis, this universal normal needs approach to needs assessment might be satirized (albeit with unfairness to the courageous colleagues over the past ten years who have given it a try), as the bottomless pit approach.

The experimental and quasi-experimental options approach, on the other hand, being program specific is also, implicitly if not always explicitly, human problem specific. Human problem rates in a population area are not universal, nor bottomless. Indeed, the rates for birth anamolies, mental-retardation, developmentally delayed pre-schoolers, reading disability, school drop outs, delinquency, emotional illness, adult schizophrenia, etc., are quite low. To set priorities for spending on the basis of population problem rates and their reduction (rather than on the basis of service categories alone) is at the heart of *The Social Service System in Ontario (Options for Accountability)*.

The Feasibility of Cost-Outcome Analysis in Ontario Social Services: Six Case Studies, demonstrates that cost-outcome can be operationalized in Ontario social services.

To take a partisan stance in what is indeed a lively debate in both economics and social work, we are suggesting, then, that for social service goods, the cost-utility and evaluation research approaches to policy analysis and fund allocation are indeed superior to the linear regression approaches of futures research and impact assessment. For agricultural and manufactured goods, where direct market demand is a possible condition and all dependent variables can be measured in dollars, linear regression procedures are appropriate; it is difficult if not impossible to impose experimental design on an entire agricutlural and manufactured goods economy.

A major consideration is the program specificity and human problem specificity which is generic to the cost-utility and evaluation research approach. The advantage here is not only in avoiding the bottomless pit of universal normal needs, but of facilitating a priority setting process within government, as the major funder of social services, which can exercise the interdependency between "fixed utility" politics and "fixed budget" politics, an interdependency which is seen as essential where social or health problems are concerned.

Note that the underlying reason why cost-outcome and cost-effectiveness analysis along with cost-benefit analysis belong to the experimental-quasi-experimental family of rational policy analysis techniques is because they can accommodate either an aggregation of single subject chart data as provided in on-going, internal agency information systems or randomized and matched group designs using inferential statistics with data from an experimental and control group study of a one-shot nature.

The six cost-outcome demonstrations reported in The Feasibility of Cost-Outcome Analysis in Ontario Social Services: Six Cast Studies all employ the aggregation of single subject data alternative. In such situations, the AB design (baseline data on the problem variable followed by periodic outcome measurement on the problem variable during treatment) illustrates one quasi-experimental design, i.e., an "after only with no control or comparison group design".[2]

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[2] For a state of the art review of recent trends in single subject experimental design technology for the front line worker, see Martin Bloom and Joel Fischer (1982). Evaluating Practice: Guidelines for the Accountable Professional (Englewood Cliffs: Prentice-Hall, Inc.).

II. UNIQUE DATA REQUIREMENTS FOR PUBLIC EXPENDITURES ANALYSIS

In 1981-82, the authors undertook two survey projects directed at further understanding of the attributes of social service organizations in Ontario. A 40-item questionnaire was mailed to 518 social agencies within a ten county sample of Ontario counties and a special computer generated analysis of 80 children's mental health centres was done drawing on a computerized data base maintained in Toronto by the Ontario Ministry of Community and Social Services.

The Ministry data base for these 80 children's mental health centres is derived from a Children's Mental Health Services Information System (CMHSIS) which captures certain uniform information from all centres monthly. This information system is coded for 69 variables and attributes under the following concepts: action code, name of client, birthdate, sex of client, postal code, patient type, wardship status, previous treatment type, referral source, placement type, present perceived problem, and termination reason.

THE QUESTIONNAIRE SURVEY

This mail survey was originally undertaken for two purposes:

1. to infer from the ten county sample of agencies to all of Ontario with respect to certain macro characteristics of the Ontario social service system such as total dollar volume, income sources, and the proportions of the total delivery system programs administered by voluntary, non-profit agencies, government departments, and profit-oriented firms.

2. to discover something about the comparative efficiency of the three administrative auspices (voluntary, non-profit agencies, government administered social services, and profit-oriented firms) by a statistical analysis of these descriptive data, chiefly at an associational or contingency level of analysis, including cross-tabulation tables.

The questionnaire survey received a response rate of 35%. In addition, most large municipal government departments could not respond because of the variety of discrete programs administered and a weakness in the questionnaire related to separate report sheets for separate programs. As a result, the machine analysis of the data had to be limited to questionnaire returns from voluntary, non-profit agencies; 19 data tables were generated on such variables as constituency base, number of programs administered, case-loads, client-age distribution, deficits-surpluses, sources of revenue, use of volunteers, staff size, units of service used, and board size.

In terms of programs, Table 1 establishes that the number of programs by type of program differs extensively. Almost half the agencies had at least one program in short-term counselling and/or referral. The next most significant category of program offered by over one-third of the respondents was that a recreational nature, including camping and informal education. Obviously, programs of a recreational or camping nature can be offered as a supplement to active treatment programs (diabetics) or they can be competitive with programs offered for full fees by private firms, or those partially financed privately but collectively such as the Boy Scouts, and YMCA.

TABLE 1

NUMBER OF PROGRAMS RUN BY NON-PROFIT FIRMS

n=145	Number of Programs (1)	No. of Agencies Reporting Programs (2)	Percentage of Agencies Reporting Programs (3)	Average No. of Programs (1 ÷ 2) (4)
Short-term Counselling and Referral	98	68	46.9	1.44
Treatment Counselling	75	42	29.0	1.79
Family Unit or Group Treatment	76	44	30.3	1.73
Residential Treatment	75	48	33.1	1.56
Group Home or Half Way House	57	27	18.6	2.11
Recreation, Camping, Informal Education	142	52	35.9	2.73
Special and Remedial Education	70	36	24.9	1.94
Neighbourhood or Special Constituency Development	31	17	11.7	1.82
Community Resource Development	52	31	21.4	1.71
Monetary Income Maintenance	7	7	4.8	1.14
In-kind Income Maintenance	11	9	6.2	1.22
Disaster Relief	2	2	1.4	1.00
Research	25	18	12.4	1.39
Other	115	49	33.8	2.35
Total	836			

In the active longer-term treatment category, offered by about one-third of the respondents to the survey were programs involving the provisions of residences or family unit and/or group therapy. Agencies offering these types of programs would be categorized as providing either primary or secondary prevention although residential treatment does extend into tertiary prevention. Obviously differences will be evident in the pathological needs of those in a residence but we are not able to tell from the survey anything about the treatment program or other factors related to residences.

At one time, many non-profit organizations were involved in the distribution of assistance of either a monetary or non-monetary type. Less than ten percent of agencies surveyed had any involvement in programs in this category. Like disaster relief, research, and community resource development, these programs require massive sums of money and consequently are not typically in the not-for-profit sector.

Table 2 indicates the caseload for non-profit firms. Here, the number of firms operating at a rather small volume is noted. The median caseload is 90 in a year with a few large firms pulling the mean up to 210. Indeed, three of the non-profit firms have caseloads exceeding 1000 per year and this causes the average to jump.

While 37 non-profit enterprises report a caseload per year of under 50, only 30 have a caseload that exceeds 300. Coupled with the statistics presented elsewhere in the appendix, it becomes evident that a large number of non-profit firms are deliberately small.

Total revenues, total expenditures, and salary expenditures are found in Table 3. Here, the average per program, and the average per

TABLE 2

CASELOAD FOR VOLUNTARY NON-PROFIT FIRMS

	n-145
0	7
1 - 5	3
6 - 10	2
11 - 20	14
21 - 50	18
51 - 100	24
101 - 997	51
over 1000	3
not reported	23
Average	201.1
Median	90.0

case has been calculated using the data provided in Tables 1 and 2. On the basis of survey data, the non-profit agencies receive an average income per program of $102,027 and an average income per case of $3,539. Median income per agency is $262,500 which is considerably smaller than the average income of $960,663 per agency. Again this is consistent with the previous observation that there are many small agencies in the non-profit sector but that a few large ones bias the averages. For instance, only 17 agencies have an income greater than the average but some of these agencies are very large indeed.

Expenditure data for non-profit agencies are also presented in Table 3. Again the median is significantly smaller than average, only 20 agencies have expenditures greater than average.

Comparing revenues and expenditures per program and per case, it is evident that on average there is a surplus of $3.2 thousand per program and a surplus of $111 per case.

For firms offering both revenue and expenditure data, the surplus/ deficit position is calculated in Table 4.

In terms of accountability, questions were put on the survey on the budget orientation, functional measures used, and evaluation measures. It is evident that the majority of firms reporting on their budget orientation carry out their budgeting only on a line-item basis. Line item budgeting is appropriate for ensuring that expenditures are made according to designated criteria as to prior authorization. Further probity is more closely assured using line-item budgeting.

Functional budgeting is used by less than one-third of the firms reporting but when coupled with those reporting program output budgets

TABLE 3

REVENUES AND EXPENDITURES: NON-PROFIT FIRMS
(n=145; smaller numbers due to refusals)

	Total Revenues	Total Expenditures	Salary Expenditures
Under - $ 10,000	2	2	6
11,000 - 20,000	2	1	7
21,000 - 50,000	8	12	16
51,000 - 100,000	17	16	19
101,000 - 200,000	7	10	24
201,000 - 1,000,000	37	36	36
Over - 1,000,000	16	18	11
Total	$ 85,499,000	$ 82,831,000	$ 60,044,000
Average per Agency	$ 960,663	$ 871,905	$ 504,571
Median Agency	$ 262,500	$ 237,500	$ 149,000
Average per Program[a]	$ 102,027	$ 98,844	$ 71,652
Average per Case[b]	3,539	$ 3,428	$ 2,485

Notes:

a) This calculation divides the total revenues or expenditures reported by the total number of programs reported by the agencies (as reported in Table 1).

b) This calculation divides the total revenues or expenditures reported by the total number of cases reported by the agencies (as reported in Table 2).

TABLE 4

DEFICIT/SURPLUS: VOLUNTARY NON-PROFIT FIRMS

Budget Size			Number Breaking Even	Number with Deficit	Number with Surplus	Average Surplus (+) or Deficit (-)
Under	-	$ 100,000	7	2	13	+ $ 5,273
$100,000	-	$1,000,000	7	12	25	+ $ 5,818
Over	-	$1,000,000	5	4	7	+ $164,188

Source: Calculated from those 82 agencies reporting both revenues and expenditures.

somewhat less than one-half the agencies reporting program output have any relationship between their outputs and expenditures (some functional budgets might be appropriately said to deal only with inputs). Of these, the majority use a per diem measure for unit cost calculations (which is related not to outcome but to control of costs and funding arrangements). Only one agency reports use of cost per closed case, a type of unit cost essential for cost-outcome analysis.

Evaluation measures (Table 5) vary tremendously from volume of services to cost-outcome or cost-effectiveness analysis. The more sophisticated the evaluation measure, the more likely the firm will be able to implement meaningful cost-outcome measures. For instance, the five firms which claim to already use objective goal attainment scales are well situated to implement cost-outcome analysis as compared to the twenty firms with narrative recording only, from which no cost-outcome analysis is possible.

The purpose of the questionnaire survey could not be satisfied for three reasons:

1. Returns from municipal government departments were too few, affecting the validity of the sample data.
2. A comparative analysis across the three administrative auspice categories could not be done because of the non-representative character of the government administered program returns.
3. Any comparative analysis of efficiency across the three administrative auspice sectors would require (from each agency) data on service unit cost and cost-outcome for discrete programs.

TABLE 5

TREATMENT OUTCOME EVALUATION MEASURE: VOLUNTARY, NON-PROFIT FIRMS

n=145

	Number	Percentage
Volume of Service	7	6
Quality Assurance[a]	10	-
Daily Log for each Client	8	7
Narrative Case Reporting	20	18
Global Assessment Scale	1	1
Subjective Problem Oriented Scale	7	6
Social Indicator	2	2
Subjective Goal Attainment Scale	24	21
Developmental Inventory	17	15
Objective Goal Attainment Scale	5	4
Single Subject Experimental Design Charting	7	6
Cost-Outcome or Cost-Effectiveness Analysis	15	13
Not Applicable or No Response	22	-

Notes:

a) Note that this is a process measure, not an outcome measurement scale option. It is, therefore, not considered in the percentage calculations.

TABLE 6

BUDGET ORIENTATION BY BUDGET SIZE:
VOLUNTARY, NON-PROFIT FIRMS

n=145

	Expenditures in Thousands of Dollars			
	Under 20	21 - 100	101 - 1000	1001 - 5000
Line item	2	15	21	7
Functional	0	9	10	3
Program Outcome	0	1	7	5

The questionnaire study does provide information about the non-profit social service sector in Ontario.[3] It is already heavily supported by government; it is highly diverse in nature with few large firms and many smaller firms. There is indication that many administrators are interested in improvements of a cost-effective nature but are lacking in knowledge as to how to implement better decision-making. It is clear that the majority (over 75 percent) of the firms must carry out better treatment evaluation measures as well as program accounting if proper decisions are to be made about the outcomes of various programs. Information of this nature can be garnered from the survey.

THE DATE BASE STUDY (80 Children's Mental Health Centres)

This computerized data base study was, of course, immeasurably simpler to do from a research procedure point of view. No questionnaires had to be prepared or mailed. No agency administrators had to be asked to complete a questionnaire.

However, the study was necessarily limited to the particular variables and attributes already coded in the CMHSIS data base.

In addition, there was no code for administrative auspice among the 80 children's mental health centres. Since most of them were known to be voluntary, non-profit agencies, it was possible for the Ministry's management information systems personnel to introduce a new code for auspice and give us the data as segregated by auspice.

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[3] See Appendix A.

Again, despite the technological ease of access to the available data, the purposes of this data base study could not be satisfied because of the unique data requirements for any analysis of social service program efficiency, either for one program or for a comparison of program efficiency across three administrative auspice sectors: voluntary, non-profit, government administered programs, and profit-oriented firms.

In the CMHSIS data base, information on the type of problem each child presented at intake (there were six coded problem types), was available but there was no information on the severity of the problem behaviour at intake; this baseline or "before treatment" data would be essential in comparing the cost-outcome picture between a voluntary agency centre and a government administered centre; perhaps one auspice was accepting the less difficult cases and thus could affect the cost involved in successful treatment.

Sixteen data tables were generated from the machine analysis on selected CMHSIS variables. These involved tables reporting on problem type by auspice, patient type by auspice, referral source by auspice, days of care by auspice, and age of client at intake.[4]

Although there are weaknesses in the data, particularly with regard to problem severity, this study permits the reader to focus on the variables that would be necessary to examine the relative efficiency of the three auspices. It quickly becomes obvious that there are sufficient differences in referral sources, problem types, and patient type that comparisons between auspices must be painstakingly carried out if they are to be meaningful.

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[4] These tables are available in Appendix B.

Again, it is clear that information needs are not being met currently but could easily be added to a data base such as CMHSIS.

III. PRICE-AUCTION THEORY IN THE ABSENCE OF DIRECT MARKET DEMAND

The quantity of services to be provided by suppliers of social services constitutes a problem of major proportions. The services have many of the characteristics which make a private market break down. For instance, a private market depends on supply and demand curves which in turn depends on a model of utility maximization by consumers and profit maximization by producers. Prices act as a clearing mechanism. If the price is too high, consumers in self-interest will not purchase and this becomes a message to producers to lower their prices or reduce output at the current prices.

In the case of social services, according to many economists there are many ways in which the market breaks down. Nelson and Krashinsky (1974) and Hansmann (1980) for instance refer to the inability of consumers to control the quality of the product and the fear that for-profit enterprises engender in the consumer when they are unable to judge the product. Further, when the consumer is a minor or suffers some infirmity (senility) there may not be an ability to form a direct demand for the service in that the person may not be able to tie together the service with a self-interest.

Most economic models would assume that if a person cannot form a direct demand, the consequences are of little significance to others besides the person himself and the supplier. However, social services are like public goods in that they exhibit significant third-party effects and consequently the breakdown in the direct demand will have an impact on more than just the individual and the supplier. Thus, if left to market provision, there will be an undersupply in the Pareto sense of that word.[5]

If total demand represents the demand of individuals (direct market demand) and the demand of others for services for third parties (inferred market demand), Pigou (1920) has shown that the demands must be summed vertically and then related to the supply (marginal costs) to determine the optimum provision of the service.

A question faced in the social services is how to accurately determine the inferred market demand. Obviously, very few individuals consciously or unconsciously calculate how much counselling, assessment, or special education are desirable for unrelated individuals.

One possible way in which the inferred demand can be derived is to permit locally-based social planning or social resource councils to carry out a census of problems, including an objective measurement of the degree of deficiency within the population. Based on such an objective census of problems, the resources can be allocated to those problems deemed most amenable to treatment according to marginal costs and the decisions made by the local social resources council.

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[5] See James Douglas, Towards a Rationale for Private Non-Profit Organizations: A Review of Current Theory. New Haven, Conn.: Yale University, Institution for Social and Policy Studies, Program on Non-Profit Organizations, Working Paper #7, April 1980, for a thorough discussion of the various characteristics of goods normally provided by non-profit enterprises.

SUMMARY

Again the limitations of descriptive attribute data and associational statistics was demonstrated in seeking to examine the efficiency of one program or two in comparison.

From this kind of experience with the mailed questionnaire survey and the CMHSIS data base study, the researchers could not avoid the conclusion that there are five unique data requirements for any examination of the efficiency of social service goods enterprises:

a) Data on problem severity at intake,

b) Data on the specification of treatment modality used,

c) Service unit cost by program,

d) Cost-outcome data by program,

e) A code for administrative auspice.

Data on agency attributes, client status, client characteristics (demographics), problem type at intake, or reason for termination, in themselves, have very little utility but are necessary pieces of information to enhance analysis of the results of any study of cost effectiveness. For instance, it would be undesirable to compare the cost-outcome where the problem at intake is alcoholism with the cost-outcome where the problem is the onset of senilty brought about by age. Similarly, it would be inappropriate to compare cases in which the problem was of long standing to those where to problem has not had an opportunity to become deep-rooted.

Demographics might play a significant role in the appropriate treatment mode and ought to be used for control purposes - particularly if certain agencies attract disproportionate clients from a particular demographic or culutral group which is most likely if sectarian agencies are involved in the heterogeneous social service sector.

As information systems are adopted which facilitate arriving at cost-outcome, another problem must be faced and that is the way in which the demand for the service is to be determined. Here the suggestion is that there be professionally conducted censuses of problems and population deficiencies under the direction of local social planning or social resource councils.

APPENDIX A

A DESCRIPTIVE PROFILE OF THE NON-PROFIT SOCIAL SERVICE SECTOR IN ONTARIO

Perhaps because non-profit enterprises do not normally add physical output, they have not attracted the attention of Statistics Canada or other statistical gathering agencies. On the other hand, because many agencies qualify for charitable status under the federal Income Tax Act, they do file a revenue and expenditure statement to the Department of National Revenue but that data are insufficiently disaggregate by geography or by type of agency to make it useful in describing the activities and size of the sector. Moreover, Department of National Revenue data are not readily available for research.[1] Finally, there are some non-profit corporations which do not seek charitable status under the Income Tax Act and as a consequence can avoid filing revenue and expenditure statements.

Data are collected by the Ministry of Community and Social Services in Ontario and by the central organizers of United Way. Again, the information, so collected, is not very useful in outlining the dimensions of the non-profit sector in Ontario since the data are collected for specific purposes, usually pertaining to a specific service without interest in the auspice of the provider of that service.

Literature in U.S. and Canada

One major attempt has been made in the United States to measure the voluntary non-profit sector, particularly relating the "importance" thereof. Data were culled from the National Revenue Service of the United States, in which a sample of "exempt organizations" filing "Form 990 tax returns" was blown up to match the total number of returns. The results are recorded in Table A-1.

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[1] For instance, there are no public use sample tapes for any Department of National Revenue data.

In Canada, there is even less in the way of information on the size of the non-profit sector. Attention has normally been directed towards the question of philanthropy rather than to the total amount of services provided by charitable organizations. Even here, the data are not broken down geographically, nor is it very recent. Finally, organizations which receive charitable donations do not constitute the enterprises which are of interest in this project.

D. SURVEY STUDY

Because of the postal strike at the time the survey was initiated and because of the difficulty in developing lists of enterprises to survey, it was decided that the survey should be conducted on a random sample of county or administrative areas, using a 100 per cent sample of enterprises receiving funds from the Ministry of Community and Social Services directly or indirectly through municipalities within those areas. By grossing up by population for the unsurveyed areas, estimates for social service enterprises throughout Ontario ought to be fairly accurate.

Based on a random number table, numbering each of the counties within each of four areas, northern, eastern, southwestern, and central, a list of the counties to be surveyed was developed as follows:

TABLE A-1

VOLUNTARY NON-PROFIT SECTOR IN UNITED STATES, 1973

Type of Agency	Number of Activities By Code[a] (in thousands)	Total Revenues (in $billions)
Religious	42[b]	4.7
Education	156[c]	93.3
Health	47[d]	33.1
Cultural	113[e]	1.1
Other	956	398.7
Total	1,314	530.9

Notes: a) The activity codes in many instances represent double counting since a parochial school would appear as both a religious and an educational institution. See Appendix B of Weisbrod and Long.

b) Includes codes 66: Religious Institution and 67: Religious (Other)

c) Includes codes 22: Education Institution and 23: Educational (Other)

d) Includes codes 37: Aid to Handicapped; 38: Health Agency; 41: Hospital Nursing Home, etc.; and 54: Medical Care

e) Includes codes 01: Arts; 28: Exhibitions, Fairs, Trade Shows; 34: Garden Clubs; 45: Indian; 55: Museum; 58: Patriotic; and 76: Social Activities

Source: Burton A. Weisbrod and Stephen H. Long, "The Size of the Voluntary Non-profit Sector: Concepts and Measures" in Research Papers - Volume 1: History, Trends, and Current Magnitudes. Sponsored by the Commission on Private Philanthropy and Public Needs. Washington, D.C.: GPO for Department of the Treasury, 1977. Tables 3 and B-2.

1) Brant County
2) Essex County
3) Haliburton County
4) Regional Municipality of Hamilton-Wentworth
5) Municipality of Metropolitan Toronto
6) Peterborough County
7) District of Nipissing
8) Simcoe County
9) Regional Municipality of Waterloo
10) Regional Municipality of York

These counties and municipal regions represent a population of 3,942,169 which constitutes 45.7 percent of the Ontario population. If it is assumed that enterprises of the same sort can be found in the remaining areas of the province, a gross-up of the survey results ought to accurately reflect what the sector looks like in Ontario.

The problems with this methodology are significant. For instance, the sample is likely to be biased since the Municipality of Metropolitan Toronto weights the results and northern counties are hardly likely to be accommodated by agencies in the same ratio to population. Secondly, since day care constitutes a significant portion of Ministry subsidized social services, it has already been the subject of another study,[2] and thus the twelve surveys received from this source were eliminated from this study since comparability between geographical areas is important.

Most social service agencies receive a portion of their funding either through municipal governments, who in turn receive a grant from the Ministry of Community and Social Services or they receive funds directly from the Ministry. In some instances, the funds represent a purchase of services but in other instances the funds are given as grants. It is the latter type of funding that is more likely to be completely covered by the agencies listed by area managers.

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[2] Krashinsky

As soon as the mail strike was over, 518 questionnaires were mailed to agencies, requesting that they complete the form. The response and mail-out is set out in Table A-2. The response rates in only two counties were smaller than twenty-five percent - Brant and Peterborough. In all other areas surveyed, the rates were higher with some being at better than one of every two forms sent out.

One would anticipate a relatively low rate of response on a survey of this type since the agencies surveyed are highly conscious of funds and often do not have staff and expertise to give over to an information system capable of handling the responses called for.

Estimating the Size of the Non-Profit Sector of the Social Service Sector

There are two ways in which to examine the question of size. The survey, conducted as part of this study, indicates the number of firms in ten counties along with total revenues and total expenditures. From these data an estimate can be made of total number of non-profit social service providers for Ontario.

Table A-2 makes the estimate by region for the number of agencies and includes an estimate of the size of the sector.

In order to confirm the first estimate in Table A-2, a telephone survey of one hundred percent of the agencies in four of the counties (Essex, Brant, Waterloo and Metro Toronto) representing 61 percent of

TABLE A-2

NUMBER OF NON-PROFIT AGENCIES IN ONTARIO

Location	Number Sent Out	Usable Non-Profit Responses	Response Rate	Estimated Total of Non-Profit Agencies	Phone Total[a]	Adjusted Estimate
Brant County	21	5	23.8	17	13/19	13
Essex County	47	17	48.9	43	35/43	35
Haliburton County	11	3	27.2	4	-	8
Regional Municipality of Hamilton-Wentworth	42	13	47.6	34	-	29
Municipality of Metropolitan Toronto	204	48	29.4	201	136/174	136
District of Nipissing	27	9	63.0	17	-	19
Peterborough County	84	8	12.1	25	-	23
Simcoe County	54	12	35.2	28	-	38
Regional Municipality of Waterloo	44	13	31.8	35	35/39	35
Regional Municipality of York	35	15	45.7	24	-	25
Sub Totals--10 counties	518	143	34.9	428		361
Total for Ontario				925[c]		780[c]

Notes:

a) Four counties were verified by phone in Onctober 1982. The denominator represents the number of agencies that still had phones and could be tracked down.

b) The adjusted estimate is based on the percentages of firms contacted by phone as a percentage of long-term agencies, assuming that the ratios are correct for all counties.

c) Calculated using the surveyed county population as a percent of Ontario's population.

the total sample gives an indication of the auspice mix, as well as permitting a more accurate calculation of an estimate for the number of non-profit social service providers in Ontario.

As will be noted in Table A-3 the constituency base varies significantly. It is no surprise that religious organizations constitute a very significant constituency base within the non-profit sector. After all, historically it was the sectarian social services that dominated in all communities. Indeed, if it had not been for the sectarian provision of social services, none would have been provided. Today, religious organizations still provide a very important impetus in the provision of social services. Many individuals find it easier to seek help from a closely-knit network of agencies provided by a denominational group than from autonomous non-sectarian agencies.

TABLE A-3

CONSTITUENCY BASE FOR VOLUNTARY NON-PROFIT FIRMS

n=145	Number of Non-Profit Agencies Claiming Constituency Base	Percentage
Religious	33	22.8
Service Club	6	4.1
Neighbourhood	16	11.0
Special Problem	14	9.7
Other	29	20.0
Not Determined	47	32.4

Non-profit firms are most heavily involved in social services for the very young and very old. The middle age groups clearly require fewer services but there is probably a greater reluctance on the part of donors or volunteers to supply agencies with funds and time for those in their working years unless there is a physical handicap involved. Amongst the very young, male clients outnumber female clients while amongst the elderly, female clients outnumber male, consistent with known information about behaviour patterns and death rates.

Table A-4 presents the caseload by Act, showing that the smaller caseload is handled by firms coming under acts such as Children's Institutions Act and Children's Boarding Houses Act. Presumably, firms of this type have longer-term care and low turnover. On the other hand, larger firms tend to fall under the Ministry of Community and Social Services Act, Children's Mental Health Centres Act, Child Welfare Act, and Charitable Institutions Act. While agencies in this category may provide some residential care, a large portion of their clientelle would be non-residential with high turnover.

TABLE A-4

CASELOAD BY ACT

	CASELOAD		
	Under 50	51-100	Over 100
Mental Health Act	0	0	3
Childrens Institutions Act	4	1	0
Charitable Institutions Act	9	4	7
Children's Boarding Houses Act	3	1	0
Child Welfare Act	1	0	3
Children's Mental Health Centres Act	0	1	3
Houses for Retarded Persons Act	1	0	0
Development Services Act	1	0	0
Ministry of Community & Social Services Act	3	2	16

When residential care is examined as in Table A-5, it is evident that the majority of firms offering residential care are relatively small with the median capacity being 28 and median number of admissions and discharges being 29. On the other hand, a small number of agencies have a residence capacity exceeding 100 and admit and discharge on a large scale, resulting in much higher averages than medians (69.7, 75.6, and 73.7 respectively).

TABLE A-5

RESIDENTIAL CAPACITY, ADMISSIONS, AND DISCHARGES:
VOLUNTARY NON-PROFIT FIRMS
(Number of Agencies Reporting)

n=145

	Capacity	Admissions	Discharges
Not applicable	70	-	-
Under 10	10	14	17
11 - 20	18	10	9
21 - 30	12	11	9
31 - 50	11	10	11
51 - 100	7	12	12
over 100	17	11	10
Average	69.7	75.6	73.7
Median	28.0	29.0	29.0

It is obvious that the skew in size is similar for caseload, residential capacity, admissions, and discharges. The majority of non-profit firms are quite small but there are some which have become quite large, the latter more likely to be under the Act which establishes the Ministry of Community and Social Services and probably more likely to think in terms of the effect that the Ministry has on their operations. Smaller firms do not need the same kind of management controls and may be more independent and diverse. Advantages are seen in this diversity.

Tables A-6 and A-7 offer some insight into how firms raise their revenues and make their expenditures. To facilitate an examination of

TABLE A-6

SOURCE OF REVENUES: VOLUNTARY NON-PROFIT FIRMS

Firms Under Charitable Institutions Act: n=25

	Less Than 5%	Between 6-25%	Between 26-50%	Over 50%
Investment	4	3	2	3
Fees	9	2	0	1
Production	3	3	1	2
Government Grants	6	1	3	4
Allotments	3	4	5	0

Firms Under Ministry of Community and Social Services Act: n=40

	Less Than 5%	Between 6-25%	Between 26-50%	Over 50%
Investment	9	1	0	0
Fees	9	1	2	3
Production	2	5	4	5
Government Grants	6	2	5	10
Allotments	1	1	2	0

Firms Under Childrens Institutions Act: n=11

	Less Than 5%	Between 6-25%	Between 26-50%	Over 50%
Investment	2	0	0	0
Fees	5	0	0	1
Production	2	0	0	0
Government Grants	3	0	0	1
Allotments	1	1	0	0

All Firms Surveyed: n=145

	Less Than 5%	Between 6-25%	Between 26-50%	Over 50%
Investment	35	7	3	0
Fees	21	14	6	7
Production	14	13	6	4
Government Grants	20	28	13	13
Allotments	8	18	6	0

TABLE A-7

DIVISION OF EXPENDITURES WITHIN VOLUNTARY NON-PROFIT FIRMS
(Median Level in Parentheses)

Firms Under Charitable Institutions Act: n=25

	Less Than 5%	Between 6-25%	Between 26-50%	Over 50%
Salaries (54%)	5	0	0	12
Occupancy	5	16	2	0
Recruitment and Education	10	0	0	0
Promotion and Publications	7	0	0	0

Firms Under Ministry of Community and Social Services Act: n=40

	Less Than 5%	Between 6-25%	Between 26-50%	Over 50%
Salaries (52%)	8	3	5	16
Occupancy	9	15	0	0
Recruitment and Education	7	0	0	0
Promotion and Publications	9	0	0	0

Firms Under Childrens Institutions Act: n=11

	Less Than 5%	Between 6-25%	Between 26-50%	Over 50%
Salaries (57%)	4	1	0	5
Occupancy	6	4	0	0
Recruitment and Education	5	0	0	0
Promotion and Publications	0	0	0	0

All Firms Surveyed: n=145

	Less Than 5%	Between 6-25%	Between 26-50%	Over 50%
Salaries (20%)	17	35	25	16
Occupancy	57	37	13	4
Recruitment and Education	51	2	1	0
Promotion and Publications	38	4	0	0

these figures Tables A-6 and A-7 contain information about the firms acting under three acts Charitable Institutions Act, Ministry of Community and Social Services Act, and Childrens Institutions Act. It will be noted, for instance, that firms that come under the Ministry of Community and Social Services Act rely more heavily on grants than on allotments whereas those that come under the Charitable Institutions Act rely more heavily on allotments than do those under the other two acts. To some extent this would be expected but is further evidence that an active community contribution can be made to some types of social service firms.

Looking at firms that report government grants or allotments (the United Way and other non-government sources), the percentage of budget deriving from the government increases as the size of the budget increases. Similarly, contributions from the United Way, service clubs, or religious organizations decreases as budget grows. The data are found in Table A-8.

TABLE A-8

AGENCIES REPORTING GRANTS OR ALLOTMENTS

n=145

Budget Size	Number of Agencies	Number of Agencies 100% Dependent on Government Grants	Average Dependency on Government Grants (in percent of total income)	Average Dependency on Allotments (in percent of total income)
Under $ 100,000	23	2	50.7	9.2
$100,000 - $1,000,000	35	6	56.4	9.0
Over $1,000,000	13	2	60.1	4.2

On the expenditure side, salaries constitute over 50% of expenditures for firms regardless of the act under which they operate. The samples turn out to be too small to determine whether the differences between firms operating under different acts are significant. It would appear that not a great deal is spent on recruitment and education or on promotion and publication but occupancy costs constitute a significant expenditure for a large proportion of the firms.

Table A-9 indicates the revenues and expenditures for Metro Toronto alone. When compared to the data for Ontario in its entirity, it is clear that the average size of voluntary non-profit social service agencies is larger (revenues by $460 thousand on average, expenditures by $350 thousand on average). Whether the demand for services or the availability of funding in Metro Toronto causes this phenomenum is difficult to evaluate. Note also that the average voluntary non-profit agency in Metro Toronto receives 82 percent of its funding from government grants compared to the Ontario sample where the median was less than 60 percent.

TABLE A-9

VOLUNTARY NON-PROFIT CORPORATIONS IN METRO TORONTO

	Total	Average per Agency	
Expenditures (42)	51,300,000	1,221,428.50	
Salaries (51)	32,534,000	637,921.56	52.2
Occupancy (53)	3,141,000	59,264.15	4.9
Recreation and Education (52)	280,000	5,384.62	0.4
Promotion and Publicity (52)	217,000	4,173.08	0.3
Other		514,685.15	42.1
Income (43)	61,107,699	1,421,109.39	
Investment (49)	1,021,000	20,836.73	1.5
Fee (48)	6,378,000	132,875.00	9.4
Production (49)	2,378,000	48,530.61	3.4
Government (48)	36,035,000	1,167,395.80	82.1
Allotments (49)	-	51,469.39	3.6
Other	-	-	-

Of interest is the number of volunteers used. Here, the non-profit sector is providing a very significant outlet for the talents of many individuals. On a per agency basis the average number of volunteers in the non-profit sector amounts to 117. Here again, a few firms reported very large usage of volunteers (Canadian Institute for the Blind) so the median is a much more modest 15. This is seen in Table A-10. Table A-10 also indicates that the average number of hours worked by volunteers in the non-profit sector amounts to 208 hours per week. Again, a few firms reported a significant number of volunteer hours per week forcing the average up greatly. The median of 30 hours per week is much more modest and also more realistic. On average a volunteer contributes about two hours per week in volunteer help.

TABLE A-10

VOLUNTEER AND STAFF USAGE

n=145

	No. of Agencies Reporting the Number of Volunteers per Annum to be	No. of Agencies Reporting the Number of Volunteer hours per week to be	No. of Agencies Reporting Staff Size to be
Under 10	75	51	78
11 - 20	32	39	33
21 - 30	23	24	10
Over 30	2	7	5
Not reported	13	24	19
Total	15,453	25,140	1,441
Average	117	208	11.4
Median	15	30	9
Average Number of Hours per Week/ Volunteer	1.63		

Volunteers are an important resource to non-profit firms since they permit a greater amount of service at a lesser price. Perhaps the one firm which used volunteers the most, the Canadian Institute for the Blind is a good example. They used 11,500 hours of volunteer work per week but when spread amongst the 8,000 volunteers that amounts to very little per person. Yet, if the services (reading, driving, etc.) had to be carried out by paid staff, it would have required 329 full-time employees which at minimum wages would cost over $40,000 per week (over $2.0 million per annum) in salaries plus an obligation for the agency in terms of unemployment insurance contributions, vacation pay, CPP contributions, and workmen's compensation. A testable hypothesis that volunteers would not donate services to a government agency would be worth examining.[3]

Reference has been made to staff. Non-profit firms were asked on the survey to indicate their staff levels and several details about the staff. Table A-10 indicates that again the differences between the majority of agencies and the few are significant. There are a few large firms - the largest employing 108 people but the larger number of firms hire less than 10 employees with the median number being 9. If the number of positions and the total salaries of the median firm in each case is relevant, the average salary of the employee in the median firm is $16,555.55.

Some information was collected on the quality of the staff in the non-profit social service agencies. Many of them have at least a bachelor's degree with a significant number holding M.S.W. or other master's degrees (Table A-11). A question arises as to the quality of staffing versus salary in the non-profit auspice firms versus government and profit firms but such an examination is beyond the scope of the project.

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[3] The Waterloo County Board of Education, for instance, after experimenting with volunteers and paid help for lunch hour supervision opted for paid supervision.

TABLE A-11

FIRST POSITION LISTED: VOLUNTARY, NON-PROFIT FIRMS

n=145

	M.S.W.	Masters Other	B.S.W.	Bachelor Other	Professional	Other
Central Management	9	9	2	16	6	38
Professional Field Workers	1	1	1	3	1	1
Semi Professional Field Workers	7	2	0	5	0	7
Non-Professional Field Workers	0	0	0	4	0	3
SECOND POSITION LISTED						
Central Management	6	3	2	14	1	22
Professional Field Workers	1	0	0	4	5	4
Semi-Professional Field Workers	9	2	0	4	1	11
Non-Professional Field Workers	0	0	0	3	0	6

Tables A-12 and A-13 describe the board and how it is selected. Some firms have large boards but the majority have smaller boards. The mode is 12, the mean is 15 because of the few extremely large boards, and the median is 13. Most boards are elected although appointments are made in some instances as are invitations. In the latter two instances, the appointees and invitees normally join elected members so that their influence is not disproportionate.

The non-profit social service sector appears to be highly diverse and includes many smaller agencies. Although small agencies may not capture economies of scale, there are questions about the ability of large agencies to adequately service the heterogeneous needs of a geographically dispersed population. Thus, the need to ensure that agencies move to an information system which makes them accountable (cost outcome) and ensures that the government can allocate resources first to those problems where the "demand" is greatest and which are most amenable to expenditures or treatment.

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TABLE A-12

BOARD SIZE: VOLUNTARY NON-PROFIT FIRMS

n=145

Less than 5	7
6 - 10	37
11 - 15	47
16 - 20	23
21 - 25	9
26 - 99	10
over 100	1
Not reported	11
Average	15
Median	13

TABLE A-13

METHOD OF BOARD SELECTION: VOLUNTARY NON-PROFIT FIRMS

n=145

	Elected	Appointed	Invited
Less than 5	45	113	119
6 - 10	22	13	10
11 - 15	35	4	2
16 - 20	14	2	2
21 - 25	10	1	0
26 - 99	6	0	0
over 100	1	0	0
Not reported	12	12	12

APPENDIX B

SPECIAL STUDY OF CHILDREN'S MENTAL HEALTH CENTRES IN ONTARIO

If, on the basis of economics, a decision is to be made about the relative efficiency of the three auspices (government administration, voluntary or non-profit enterprises, and profit oriented enterprises) it is necessary to examine whether in fact the types of clients are similar and whether the services provided are similar. For instance, if the government agency, as has often been assumed, are handling cases of much more severity than agencies of other auspices, it could not be expected that the government agencies would be able to achieve the same kind of average cost function that the non-profit agency or the profit-oriented enterprise might. Thus, a great deal of the economic modelling depends on the type of cases that the various auspices undertake to treat.

It is for that reason that the Ministry of Community and Social Services for Ontario was contacted and asked to run a special cross-tabulation from their CHMSIS data base regarding the 80 Children's Mental Health centres (C.M.H.C.) in Ontario. The majority of the C.M.C.H.'s are in the non-profit sector, but there are three in the government sector and one in the profit sector.[1] Thus, it is possible to examine the problem types, the patient types, and referral sources for this particular group of agencies.

The consequence of being able to look at these questions is that one can determine from a more thorough knowledge of this particular

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[1] Since these data were compiled the lone profit agency has been changed to a non-profit agency. Confirmed by phone, November 26, 1982.

Social Service, whether various hypotheses about the economic implications are appropriate.

Problem Type

There are seven problem types identified in the data. These include school and learning problems, thought and perception problems, disruptive behaviour, social behaviour difficulties, bodily function problems, retardation, and other. An array of problem type by ausprice is found in Table B-1. The expectation that the government administered enterprises, the voluntary enterprises, and the profit-oriented enterprises deal with different problem types is confirmed. It is noted that the non-profit sector has a larger than expected number of clients with school and learning difficulties, thought and perception difficulties, and retardation problems. On the other hand, the government is over represented by those who have demonstrated disruptive behaviour, social behavioural problems, and bodily function problems.

TABLE B-1

PROBLEM TYPE BY AUSPICE
(Percent in Parentheses)

	Government Administration	Voluntary Non-Profit	Profit Oriented Enterprises
School and learning	42 (2.75)	1468 (96.14)	17 (1.11)
Thought and perception	6 (2.94)	196 (96.08)	2 (0.98)
Disruptive behaviour	306 (11.25)	2359 (86.73)	55 (2.02)
Social behaviour	60 (10.64)	501 (88.83)	3 (0.53)
Bodily function	46 (9.75)	424 (89.83)	2 (0.42)
Retardation	5 (5.49)	86 (94.51)	0 (0.00)
Unknown and other	41 (3.81)	1034 (96.10)	1 (0.09)
	506 (7.60)	6068 (91.19)	80 (1.20)

Chi-square: 177.20, significant.

Since it probably costs more, for certain types of problems than for others, one would anticipate a different average cost function for the different auspices.

When problem type is broken down by auspice, controlling for the type of patient, one learns a great deal of additional information about likely costs. In Table B-2 the problem type by auspice for assessment cases is detailed. Here, again note the voluntary or non-profit sector is over represented amongst school learning problems, thought and perception problems and retardation problems. Similarly, the government is over represented in cases of disruptive behaviour, social behavioural problems, and bodily function problems.

TABLE B-2

PROBLEM TYPE BY AUSPICE FOR ASSESSMENT PATIENTS
(Percent in Parentheses)

	Government Administration	Voluntary Non-Profit	Profit Oriented Enterprises
School and learning	42 (3.95)	1018 (95.68)	4 (0.38)
Thought and perception	6 (5.04)	112 (94.12)	1 (0.84)
Disruptive behaviour	306 (15.57)	1640 (83.46)	19 (0.97)
Social behaviour	60 (13.79)	372 (85.82)	3 (0.69)
Bodily function	46 (13.73)	289 (86.27)	0 (0.00)
Retardation	5 (6.49)	72 (93.51)	0 (0.00)
Unknown and other	31 (8.49)	334 (91.51)	0 (0.00)
	496 (11.38)	3837 (88.00)	27 (0.62)

Chi-square: 117.60, significant.

Source: Special data supplied by Ministry of Community and Social Services to specification.

In Table B-3 the non-profit sector is represented to a greater extent than expected amongst in-patients. In Table B-4, the problem type by auspice, controlled for out-patients is noted and here there is a significant difference between the populations in each auspice. The voluntary non-profit sector is over represented amongst all problem types except school and learning disabilities and disruptive behaviour problems.

TABLE B-3

PROBLEM TYPE BY AUSPICE FOR IN-PATIENTS
(Percent in Parentheses)

	Government Administration	Voluntary Non-Profit
School and learning	0 (0.00)	10 (100.0)
Thought and perception	0 (0.00)	5 (100.0)
Disruptive behaviour	0 (0.00)	72 (100.0)
Social behaviour	0 (0.00)	11 (100.0)
Retardation	0 (0.00)	1 (100.0)
Unknown and other	7 (10.29)	61 (89.71)
	7 (4.19)	160 (95.81)

Source: Special data supplied by Ministry of Community and Social Services to specification.

TABLE B-4

PROBLEM TYPE BY AUSPICE FOR OUT-PATIENTS
(Percent in Parentheses)

	Government Administration	Voluntary Non-Profit	Profit Oriented Enterprises
School and learning	0 (0.00)	409 (96.92)	13 (3.08)
Thought and perception	0 (0.00)	71 (98.61)	1 (1.39)
Disruptive behaviour	0 (0.00)	550 (93.86)	36 (6.14)
Social behaviour	0 (0.00)	104(100.00)	0 (0.00)
Bodily function	0 (0.00)	130 (98.48)	2 (1.52)
Retardation	0 (0.00)	10(100.00)	0 (0.00)
Unknown and other	3 (0.48)	615 (99.35)	1 (0.16)
	3 (0.16)	1889 (97.77)	40 (2.07)

Source: Special data supplied by Ministry of Community and Social Services to specification.

From examining the above four tables together, it is clear that the government sector handles more assessment cases but the voluntary non-profit sector handles a greater number of in-patient and out-patient cases.

Table B-5, details the patient type by auspice. For school and learning problems and disruptive behaviour, Tables B-6 and B-7 detail the patient type. In these two problem areas, all of the government work is of an assessment nature whereas the non-profit agencies are involved in a wider diversity of patient types.

TABLE B-5

PATIENT TYPE BY AUSPICE
(Percent in Parentheses)

	Government Administration	Voluntary Non-Profit	Profit Oriented Enterprises
Assessment	496 (11.38)	3837 (88.00)	27 (0.62)
In-patient	7 (4.19)	160 (95.81)	0 (0.00)
Out-patient	3 (0.15)	1889 (97.12)	53 (2.72)
Day care	0 (0.00)	70(100.00)	0 (0.00)
Home care	0 (0.00)	107(100.00)	0 (0.00)
Tracking	0 (0.00)	5(100.00)	0 (0.00)
	506 (7.60)	6068 (91.19)	80 (1.20)

Referral Source

One of the factors which will affect the behaviour of the firm is the demand for the firm's services. The demand for the firm's services is a summation of the demands by various sources of demand including the parent, self, psychiatrists, clinical practitioners, other mental health agencies, mental retardation facilities, general hospitals,

TABLE B-6

PATIENT TYPE BY AUSPICE FOR SCHOOL AND LEARNING

(Percent in Parentheses)

	Government Administration	Voluntary Non-Profit	Profit Oriented Enterprises
Assessment	42 (3.95)	1018 (95.68)	4 (0.38)
In-patient	0 (0.00)	10(100.00)	0 (0.00)
Out-patient	0 (0.00)	409 (96.92)	13 (3.08)
Day care	0 (0.00)	17(100.00)	0 (0.00)
Home care	0 (0.00)	13(100.00)	0 (0.00)
Tracking	0 (0.00)	1(100.00)	0 (0.00)
	42 (2.75)	1468 (96.14)	17 (1.11)

TABLE B-7

PATIENT TYPE BY AUSPICE FOR DISRUPTIVE BEHAVIOUR

(Percent in Parentheses)

	Government Administration	Voluntary Non-Profit	Profit Oriented Enterprises
Assessment	306 (15.57)	1640 (83.46)	19 (0.97)
In-patient	0 (0.00)	72(100.00)	0 (0.00)
Out-patient	0 (0.00)	550 (93.86)	36 (6.14)
Day care	0 (0.00)	34(100.00)	0 (0.00)
Home care	0 (0.00)	60(100.00)	0 (0.00)
Tracking	0 (0.00)	3(100.00)	0 (0.00)
	306 (11.25)	2359 (86.73)	55 (2.02)

children's aid societies, education agencies, court facilities, public health nurses, and others. One would hypothesize that if the parent of the patient himself is the referral source, the costs would be less high than if the patient was referred by the courts. Similarly, other practitioners in the health field might also refer high cost cases, particularly since they might have been treating the patients themselves and find that the costs exceed what they are willing to undertake. It is thus important to look at referral source for each auspice.

Table B-8 provides information about the referral sources by auspice. It is noted, for instance, that other mental health facilities, general hospitals, children's aid societies, and court facilities refer to government administered enterprises to a greater extent than would

TABLE B-8

REFERRAL SOURCE BY AUSPICE
(Percent in Parentheses)

	Government Administration	Voluntary Non-Profit	Profit Oriented Enterprises
Parent	66 (5.38)	1159 (94.46)	2 (0.16)
Self	3 (3.90)	72 (93.51)	2 (2.60)
Psychiatrist	7 (4.76)	136 (92.52)	4 (2.72)
Other Clinical Practitioner	45 (4.03)	1071 (95.97)	0 (0.00)
Other Mental Health	38 (11.24)	288 (85.21)	12 (3.55)
Mental Retardation Facility	4 (7.27)	51 (92.73)	0 (0.00)
General Hospital	30 (13.27)	187 (82.74)	9 (3.98)
Children's Aid Society	129 (19.17)	528 (78.45)	16 (2.38)
Education Agency	102 (6.02)	1572 (92.80)	20 (1.18)
Court Facility	55 (13.82)	342 (85.93)	1 (0.25)
Public Health Nurse	10 (6.80)	137 (93.20)	0 (0.00)
Other or unknown	17 (3.06)	525 (94.42)	14 (2.52)
	506 (7.60)	6068 (91.19)	80 (1.20)

Chi-square: 305.96, significant

be expected. On the other hand, voluntary non-profit organizations receive a greater than expected referral from parents, self, psychiatrists, clinical practitioners, mental retardation facilities, educational agencies, public health nurses, and unknowns. Profit oriented enterprises reveive more than proportional referrals from self, psychiatrists, other mental health facilities, general hospitals, and children's aid societies. Thus, there are some conflicting data. We have already indicated that the hypotheses would be that if the parent or the patient himself referred, the costs would be lower. On the other hand, referrals from courts etc. would be higher cost. Here, the government administered agencies receive referrals from high cost sources but so do the voluntary non-profit enterprises particularly from mental facilities and clinical practitioners. The chi-square in Table B-8 is highly significant at 305.96.

Table B-9 indicates a significant difference between the government administered and the non-profit administered enterprises in so far

TABLE B-9

REFERRAL SOURCE BY AUSPICE FOR IN-PATIENTS
(Percent in Parentheses)

	Government Administration	Voluntary Non-Profit
Parent	0 (0.00)	17 (100.00)
Self	0 (0.00)	2 (100.00)
Psychiatrist	0 (0.00)	10 (100.00)
Other Clinical Practitioner	0 (0.00)	17 (100.00)
Other Mental Health	3 (13.04)	20 (86.96)
Mental Retardation Facility	0 (0.00)	1 (100.00)
General Hospital	0 (0.00)	11 (100.00)
Children's Aid Society	0 (0.00)	45 (100.00)
Education Agency	0 (0.00)	12 (100.00)
Court Facility	0 (0.00)	15 (100.00)
Public Health Nurse	0 (0.00)	2 (100.00)
Other or unknown	4 (33.33)	8 (66.67)
	7 (4.19)	160 (95.81)

as referral source for in-patients is concerned. Here, the voluntary non-profit agencies receive a significantly higher proportion of referrals for in-patient services than does the government administered agencies, except from other mental health facilities.

Table B-10 indicates the relative costs of the different auspices in terms of care of in-patients. Note, the fact that the voluntary non-profit sector treats over 80% of the in-patients and to do that, the voluntary non-profit sector uses 82% of the days of care.

TABLE B-10

DAYS OF CARE BY AUSPICE: IN-PATIENTS

	Government Administration	Voluntary Non-Profit	Profit Oriented Enterprises	Total
Number of cases	157	1,124	93	1,374
Days of care	16,545	137,636	13,636	167,817
Average days of care	105.4	122.5	146.6	122.1

There is a danger that these statistics might be seen to indicate voluntary non-profit enterprises are retaining patients too long. That is not necessarily the case, given the fact that the referral sources vary significantly as do problem types and patient types. Indeed, it has already been noted that the voluntary non-profit sector has significantly more than its share of retarded children.

Again, age can influence the costs and also the demand for services. Obviously, the very youngest patients are most likely to require the greatest amount of attention on a per capita basis while older patients are more likely to require greater supervision in order to avoid vandalism and other difficulties within the agency. Table B-11 sets out these statistics and shows us that the chi-square is highly significant. Again, the three auspices do not appear to take their patients from the same population group.

TABLE B-11

AGE AT TIME OF INTAKE BY AUSPICE
(Percent in Parentheses)

	Government Administration	Voluntary Non-Profit	Profit Oriented Enterprises
Five and under	115 (6.67)	1607 (93.16)	3 (0.17)
6 - 10	242 (7.84)	2824 (91.54)	19 (0.62)
11 - 12	152 (12.08)	1090 (86.65)	16 (1.27)
13 - 14	180 (10.36)	1534 (88.31)	23 (1.32)
15 - 16	87 (6.20)	1283 (91.45)	33 (2.35)
17 - 18	13 (2.93)	420 (94.59)	11 (2.48)
19 - 20	0 (0.00)	37(100.00)	0 (0.00)
Over 20	7 (15.22)	38 (82.61)	1 (2.17)
	796 (8.18)	8833 (90.73)	106 (1.09)

Chi-square: 122.79, significant

Tables B-12 to B-16 provide data on patient type by auspice controlling for referral source. For instance, when the court refers to government administered enterprises, the referral tends to be for in-patient or out-patient care, day care, or home care.

The referrals by the CAS for assessment purposes tend to be towards the government administered enterprises whereas for in-patient and out-patient and other types of care, the referrals tend to be towards the non-profit sector. Comparing the referrals by the CAS to all referrals, the CAS tends to refer more frequently than would be

TABLE B-12

PATIENT TYPE BY AUSPICE:
REFERRAL SOURCE - COURT FACILITIES
(Percent in Parentheses)

	Government Administration	Voluntary Non-Profit	Profit Oriented Enterprises
Assessment	55 (20.07)	218 (79.56)	1 (0.36)
In-patient	0 (0.00)	15(100.00)	0 (0.00)
Out-patient	0 (0.00)	102(100.00)	0 (0.00)
Day care	0 (0.00)	4(100.00)	0 (0.00)
Home care	0 (0.00)	3(100.00)	0 (0.00)
Tracking	0 (0.00)	0(100.00)	0 (0.00)
All Patient Types Court Facilities	55 (13.82)	342 (85.93)	1 (0.25)
All Patient Types All Referral Sources	506 (7.60)	6068 (91.19)	80 (1.20)

TABLE B-13

PATIENT TYPE BY AUSPICE:
REFERRAL SOURCE - CAS
(Percent in Parentheses)

	Government Administration	Voluntary Non-Profit	Profit Oriented Enterprises
Assessment	129 (27.22)	332 (70.04)	13 (2.74)
In-patient	0 (0.00)	45(100.00)	0 (0.00)
Out-patient	0 (0.00)	132 (97.78)	3 (2.22)
Day care	0 (0.00)	8(100.00)	0 (0.00)
Home care	0 (0.00)	10(100.00)	0 (0.00)
Tracking	0 (0.00)	0(100.00)	0 (0.00)
All Patient Types CAS	129 (19.17)	528 (78.45)	16 (2.38)
All Patient Types All Referral Sources	506 (7.60)	6068 (91.19)	80 (1.20)

TABLE B-14

PATIENT TYPE BY AUSPICE:
REFERRAL SOURCE - EDUCATIONAL AGENCY
(Percent in Parentheses)

	Government Administration	Voluntary Non-Profit	Profit Oriented Enterprises
Assessment	99 (8.71)	1035 (91.11)	2 (0.18)
In-patient	0 (0.00)	12(100.00)	0 (0.00)
Out-patient	3 (0.61)	471 (95.34)	20 (4.05)
Day care	0 (0.00)	30(100.00)	0 (0.00)
Home care	0 (0.00)	23(100.00)	0 (0.00)
Tracking	0 (0.00)	0(100.00)	0 (0.00)
All Patient Types Educational Agency	102 (6.01)	1572 (92.69)	22 (1.30)
All Patient Types All Referral Sources	506 (7.60)	6068 (91.19)	80 (1.20)

TABLE B-15

PATIENT TYPE BY AUSPICE:

REFERRAL SOURCE - Other Health Facilities, including Pyschiatrist
Other Clinical Practitioner
Other Mental Health
Mental Retardation Facilities
General Hospital
Public Health Nurse
(Percentages in Parentheses)

	Government Administration	Voluntary Non-Profit	Profit Oriented Enterprises
Assessment	131 (9.73)	1205 (89.52)	10 (0.74)
In-patient	3 (4.62)	62 (95.38)	0 (0.00)
Out-patient	0 (0.00)	562 (97.40)	15 (2.60)
Day care	0 (0.00)	16(100.00)	0 (0.00)
Home care	0 (0.00)	26(100.00)	0 (0.00)
All Patient Types other health referrals	134 (6.60)	1870 (92.16)	25 (1.23)
All Patient Types All Referral Sources	506 (7.60)	6068 (91.19)	80 (1.20)

TABLE B-16

PATIENT TYPE BY AUSPICE: REFERRAL SOURCE - PARENTS (Percent in Parentheses)

	Government Administration	Voluntary Non-Profit	Profit Oriented Enterprises
Assessment	66 (7.91)	768 (92.09)	0 (0.00)
In-patient	0 (0.00)	17(100.00)	0 (0.00)
Out-patient	0 (0.00)	343 (99.42)	2 (0.58)
Day care	0 (0.00)	6(100.00)	0 (0.00)
Home care	0 (0.00)	22(100.00)	0 (0.00)
Tracking	0 (0.00)	3(100.00)	0 (0.00)
All Patient Types Parents	66 (5.38)	1159 (94.46)	2 (0.16)
All Patient Types All Referral Sources	506 (7.60)	6068 (91.19)	80 (1.20)

expected to government administered enterprises and much less frequently than expected to the voluntary non-profit enterprises.

Summary

The social service sector in Ontario, certainly provides a rich field for investigation.

The fact that the non-profit agencies have greater representation in the residential treatment programs than would be predicted by their numbers, indicates that they are providing treatment services, even though they might be primary treatment as opposed to other types of treatment.

CHMC's were examined in an attempt to look at the factors which influence relative costs and also the demand function. The number of days per case proved to be smaller for government enterprises than either the voluntary non-profit sector or the profit oriented sector. This is probably explained by the heavier assessment rate carried by the publicly administered centres. The government operated enterprises do carry a large proportion of assessments. That may be quite an appropriate role for the government enterprises to undertake, permitting the voluntary non-profit agencies and the profit oriented agencies to actually undertake the care of the patients, and would be in line with comments made in other documents about accountability.

Thus, the data in this appendix indicate that at least for the CHMC's, the non-profit sector is carrying a significant amount of treatment, whereas the government administered sector is doing more assessments. These statistics have importance in terms of allocating resources to the various sectors. In addition, if any kind of cost outcome analysis is to be done, it would be desirable to have an impartial assessment carried out and since the CMHC's government administered enterprises tend to do the assessments while other enterprises tend to do the caring, the basic structure for implementing cost-outcome analysis is already in place.

REFERENCES

Bloom, Martin and Fischer, Joel (1982)
Evaluating Practice: Guidelines for the Accountable Professional. Englewood Cliffs: Prentice-Hall, Inc., 1982.

Carley, Michael (1980)
Rational Techniques in Policy Analysis. London: Heinemann Educational Books, 1980.

Douglas, James (1980)
Towards a Rationale for Private Non-Profit Organizations: A Review of Current Theory. New Haven, Conn.: Yale University, Institution for Social and Policy Studies, Program on Non-Profit Organizations, Working Paper #7.

Krashinsky, Michael (1981)
User Charges in the Social Services: An Economic Theory of Need and Ability. Toronto: Ontario Economic Council.

Olsen, M.E. and Merwin, D. (1977)
"Towards a Methodology for Conducting Social Impact Assessments Using Quality of Life Social Indicators" in Methodology of Social Impact Assessment, ed. by K. Finsterbusch and C. Wolf. Stroudsburg, Pa.: Dowden, Hutchinson & Ross.

Pigou, A.C. (1920)
The Economics of Welfare. London: Macmillan & Co.

Weisbrod, B.A. and Long, S.H. (1977)
"The Size of the Voluntary Non-Profit Sector: Concepts and Measures" in Research Papers - Volume 1: History, Trends and Current Magnitudes. Washington, D.C.: GPO for the Department of the Treasury.

Wolf, C.P. (1974)
Social Impact Assessment: The State of The Art. Milwaukee: Environmental Design Research Association, 1974.

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.06 The economics of
.0675 social service goods.
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